

## UPDATED INFORMATIVE DIGEST

### Amendments to the Gasoline Deposit Control Additive Regulation

**Sections Affected:** Adopted amendments to section 2257, title 13, California Code of Regulations (CCR), and the following incorporated documents: American Society for Testing and Materials (ASTM) D 5500-94, ASTM D 5598-94, ARB's "Test Method for Evaluating Port Fuel Injector (PFI) Deposits in Vehicle Engines" and ARB's Test Method for Evaluating Intake Valve and Combustion Chamber Deposits in Vehicle Engines."

**Background:** The current gasoline deposit control additive regulation -- section 2257, title 13, California Code of Regulations -- was adopted by the Board in 1990. The regulation requires that all commercial gasoline formulations be certified to contain effective levels of detergent additives. The regulation also contains specific administrative and performance requirements that a gasoline producer, importer, or distributor must meet to obtain certification of a gasoline formulation.

Specifically, the regulation requires that applicants demonstrate that their gasoline formulation containing a deposit control additive, represented as a certification test fuel, meets specified performance criteria pertaining to: (i) the control of intake valve deposits when tested in accordance with the ASTM method D5500-94, and (ii) the prevention of port fuel injector deposits when tested in accordance with ASTM method D5598-94 (also known as PFI keep-clean test), and (iii) the reduction of port fuel injector deposits when tested in accordance with the Stationary Source Division's "Test Method for Evaluating Port Fuel Injector Deposits in Vehicle Engines," dated July 2, 1996 (also known as the PFI clean-up test).

**Description of Regulatory Action:** At the public hearing held on September 24, 1998, the ARB staff proposed amendments to the gasoline deposit control additive regulation. After considering the staff's recommendations, public comments, and testimony, the Board passed resolution 98-46, which adopted the amendments contained in the August 7, 1998, staff report, with a few minor corrections. The amendments are described below.

**Amendments to the Regulatory Standard:** The adopted amendments to section 2257(a), title 13, CCR, voids any gasoline certification issued prior to July 1, 1996 which eliminates the use of certifications issued prior to the introduction of California cleaner burning gasoline. These amendments also allow the use of existing gasoline certifications issued between July 1, 1996, and 30 days after the effective date of the amendments, without meeting a new performance standard for combustion chamber deposits. The 30 day transition period is to allow for the processing of gasoline certification applications submitted just prior to the effective date of the amendments.

**Amendment to Eliminate the Port Fuel Injector Clean-up Performance Test Requirement:** The Board adopted an amendment to delete the existing section 2257(c)(1)(A)(iii) text pertaining to port fuel injector clean-up testing requirement.

*Amendment to Lower the Performance Standard for Demonstration of Intake Valve*

*Performance:* The Board adopted an amendment to lower the existing performance standard for demonstrating intake valve deposit effectiveness from the current 100 milligrams per intake valve (averaged across all four intake valves), to 50 milligrams per intake valve (averaged across all four intake valves), when tested in accordance with the referenced vehicle test method.

*Amendment to Include a New Performance Standard for Combustion Chamber Deposits:* The Board adopted an amendment which adds new regulatory text to section 2257(c)(1)(A)(iii) and requires a combustion chamber deposit performance demonstration for gasoline certification. This amendment requires an applicant to perform a pre-described test to show that combustion chamber deposits will be maintained under 1300 milligrams per cylinder (when averaged across all four cylinders of the BMW 318i test vehicle). There is also an optional combustion chamber deposit demonstration that allows an applicant to compare the combustion chamber deposit difference of a certification test gasoline with no additive to a certification test gasoline with additive.

*Amendments to Update the Vehicle Test Methods Incorporated in the Gasoline Deposit Control*

*Additive Regulation:* The Board adopted an amendment to section 2257(c)(1)(A)(i) to update the referenced intake valve deposit test method from ASTM D 5500-94 to ASTM D 5500-98. The amendment to section 2257(c)(1)(A)(ii) updates the referenced port fuel injector test method from ASTM D5598-94 to ASTM D-5598-95a. Finally, the amendment to section 2257(c)(1)(A)(iii) incorporates by reference a new ARB vehicle test method for measuring combustion chamber deposits.

*Amendment to Specify the T90 Distillation Temperature of Certification Test Gasoline:* The Board adopted an amendment to specify the minimum requirements for the T90 distillation temperature of certification test gasoline to be within 40°F of the maximum requested gasoline property values for certification.

*Amendment to Require Submittal of Information Related to Certification Test Gasoline*

*Formulation:* Another adopted amendment requires applicants to submit the list of blend stocks used to produce the certification test gasoline. This amendment allows staff to request detailed information about the blend stocks used to determine the representativeness of the certification test gasoline, compared to the typical gasoline which will be marketed under the approved certification.

**Comparable Federal Deposit Control Additive Requirements.**

The U.S. EPA promulgated a final rule (61 Fed. Reg. 35309 (July 5, 1994).) in 1996 to implement their deposit control additive program in two phases. The initial phase of the

program was in effect prior to 1997 and consisted of an interim regulation. The final additive phase of the federal additive regulation went into effect in 1997 and requires submittal of additive registration under 40 Code of Federal Regulations (CFR) sections 79.6, 79.10, 79.11, 79.20 and 79.21, as applicable.

The final federal regulation also establishes a certification program similar to the existing California gasoline deposit control additive regulation. Under the final federal deposit control additive regulation, applicants are required to meet the same performance standards as the current California gasoline deposit control additive program for port fuel injector keep-clean and intake valve deposits. However, the U.S. EPA does not require a port fuel injector clean-up demonstration. With the adopted amendments, the federal and state regulations will be more consistent due to the deletion of the port fuel injector clean-up demonstration. However, the programs will also differ with the amendment to lower the existing intake valve deposit performance standard and the addition of the combustion chamber deposit performance standard.

The final U.S. EPA regulation allows ARB certifications to meet the federal certification requirements for California gasoline. In these cases, the U.S. EPA has delegated the administration and recordkeeping requirements to the State for gasolines sold in California.